Buena Vista Creek

Ecological Reserve

(CNLM No: S037)

Annual Report

October 2008 – September 2009

Prepared for:

U.S. Fish and Wildlife Service

California Department of Fish and Game

City of Carlsbad

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I. INTRODUCTION

This report summarizes the management activities carried out at the Buena Vista Ecological Reserve (Reserve) by the Center for Natural Lands Management (CNLM or Center) during the 2008-2009 management year (October 1 to September 30). These management activities were developed based on the management guidelines of the Buena Vista Creek Ecological Reserve Management and Funding Agreement (MFA) signed in August of 2007 (CNLM/CDFG 2007) between the Center and the California Department of Fish and Game (CDFG) and from the Buena Vista Creek Ecological Reserve Annual Work Plan (AWP) for the 2008-2009 management year. Associated with the MFA and AWP is a detailed Property Analysis Record (PAR) and yearly budget, which outlines a list of management tasks and costs that were agreed upon during CNLM's negotiations with CDFG. CDFG has held title to the Reserve since approximately March 2007 and CNLM manages it pursuant to the MFA (as of August 2007) and agreed upon annual work plans.

The 134-acre Reserve is located along State Route 78 (SR-78) between the two termini of Haymar Drive (east and west) (Figures 1 and 2). SR-78 is along the northern boundary and a golf driving range is located along the western boundary. There is natural, but unprotected, land along the eastern and portions of the southern boundaries, and houses exist along the remaining portions of the southern boundary. The dominant vegetation communities that occur include southern willow scrub and willow riparian forest and nonnative grassland. The state and federally listed least Bell's vireo (*Vireo bellii pusillus*) and thread-leaved brodiaea (*Brodiaea filifolia*), and the federally listed coastal California gnatcatcher (*Polioptila californica californica*) are known to occur on the Reserve.

HCA management includes maintaining signs and fences (capital improvements), biological surveys, habitat maintenance, public services and reporting. Each of these activities and their management year results are summarized below and fully described within this report.

Management Summary:

- Vandalized fencing and signage were replaced and/or repaired where necessary
- A new gate was installed along the southeastern boundary
- Trash was removed from former encampments and other localities by Center personnel and volunteers
- We facilitated the treatment of invasive riparian plants by the Carlsbad Watershed Network
- About 10 acres of fennel (*Foeniculum vulgare*) were re-treated in the upland areas
- Approximately 5 acres of black mustard (*Brassica nigra*) and non-native grasses were mowed in the uplands along the southern boundary in the spring
- We treated many heavy infestations of ice plant (*Carpobrotus edulis*, *Melephora crocea*), artichoke thistle (*Cynara cardunculus*), re-treated the population of perennial pepperweed (*Lepidium latifolium*), and treated one location of Dallis grass (*Paspalum dilatatum*)
- We mapped the boundaries the pepperweed, and a dense infestation of the non-native fireweed groundsel (*Senecio linearifolius*)
- We began a general plant survey, and searched for sensitive plant species

◦We censused the thread-leaved brodiaea location, and mapped one location of Palmer's sagewort (*Artemisia palmeri*)
◦We mapped a stand of narrow-leaf milkweed (*Asclepias fascicularis*) that served as host to a large number of larval monarch (*Danaus plexippus*) butterflies
◦We incidentally noted several animal sightings while carrying out other tasks
◦CDFG conducted two surveys for sensitive bird species and recorded 2 pair and 1 single male of coastal California gnatcatchers and 3 pair and 3 single male least Bell's vireo
◦CNLM participated in a few public outreach events planned by Preserve Calavera, and participated in the filming of a public outreach video
◦We participated in a stakeholder meeting concerning sewer access, associated improvements, and cultural resources
◦We mapped many former encampment sites
◦We patrolled regularly, and removed two itinerants on two separate occasions
◦Fuel zones were cleared or thinned as prescribed
◦An annual work plan for the upcoming management year was developed

II. MANAGEMENT ACTIVITIES

The following sections identify and describe the activities that were performed during this management year. Based upon the Property Analysis Record (PAR) developed by the Center to outline long term management tasks and costs, management activities for the HCA can be categorized as follows: Capital Improvements, Biological Surveys, Habitat Restoration, Public Services, Reporting, Office Maintenance, and Operations. Each of these categories will be discussed below.

A. CAPITAL IMPROVEMENTS

Capital improvement activities this management year included the replacement of one gate and various signs, and the repair of a small section of fencing. The gate that was replaced is located at the southeastern edge of the Reserve along the path the follows a ridge, and enters Hanson Aggregates property to the east. This gate was a replacement gate for one installed that did not meet the City of Carlsbad Fire Dept. requirements for gate width. All kiosks were maintained to reflect current information.

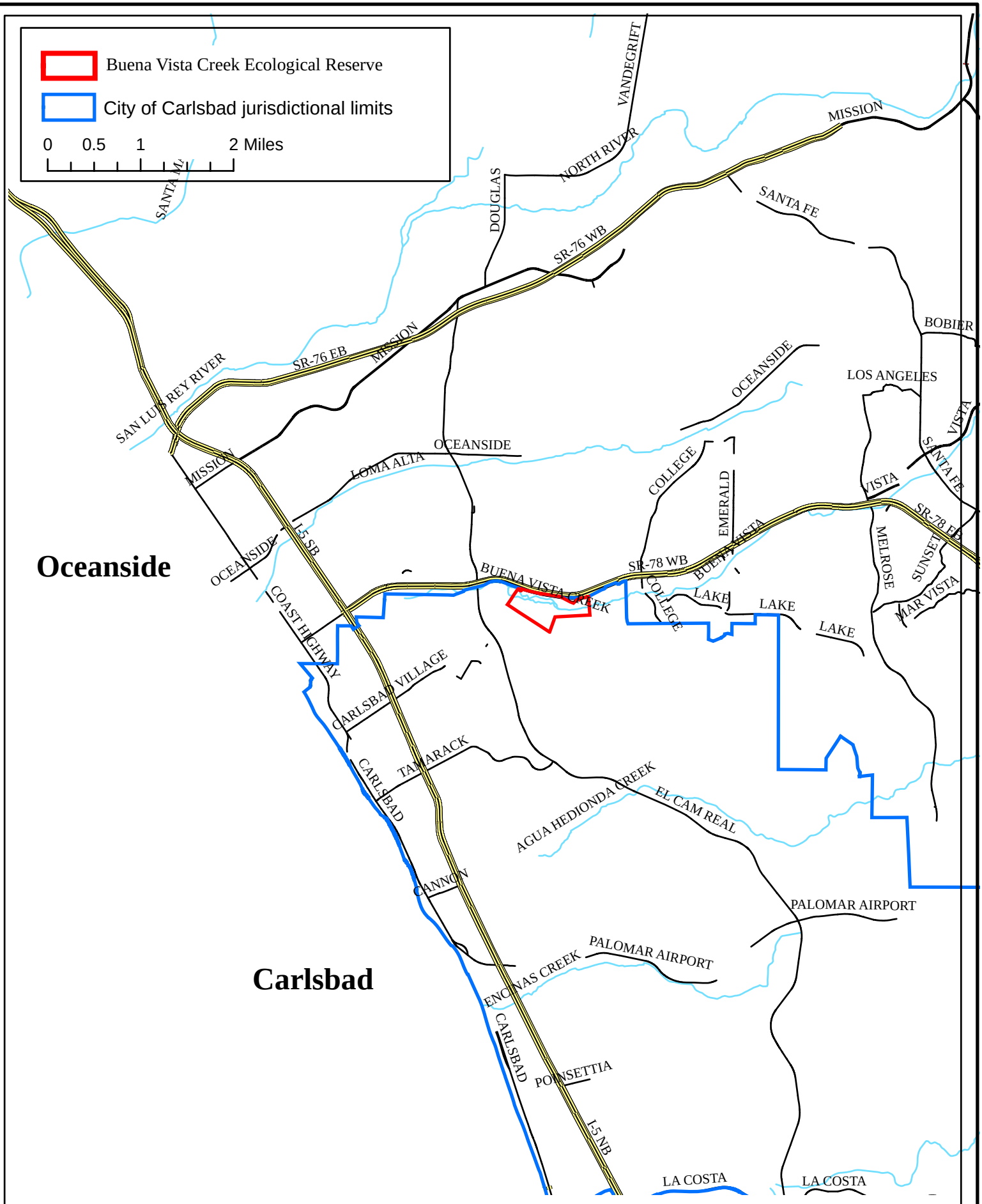

Figure 1
Project Location
Buena Vista Creek Ecological Reserve-Carlsbad, CA

Center for Natural Lands Management

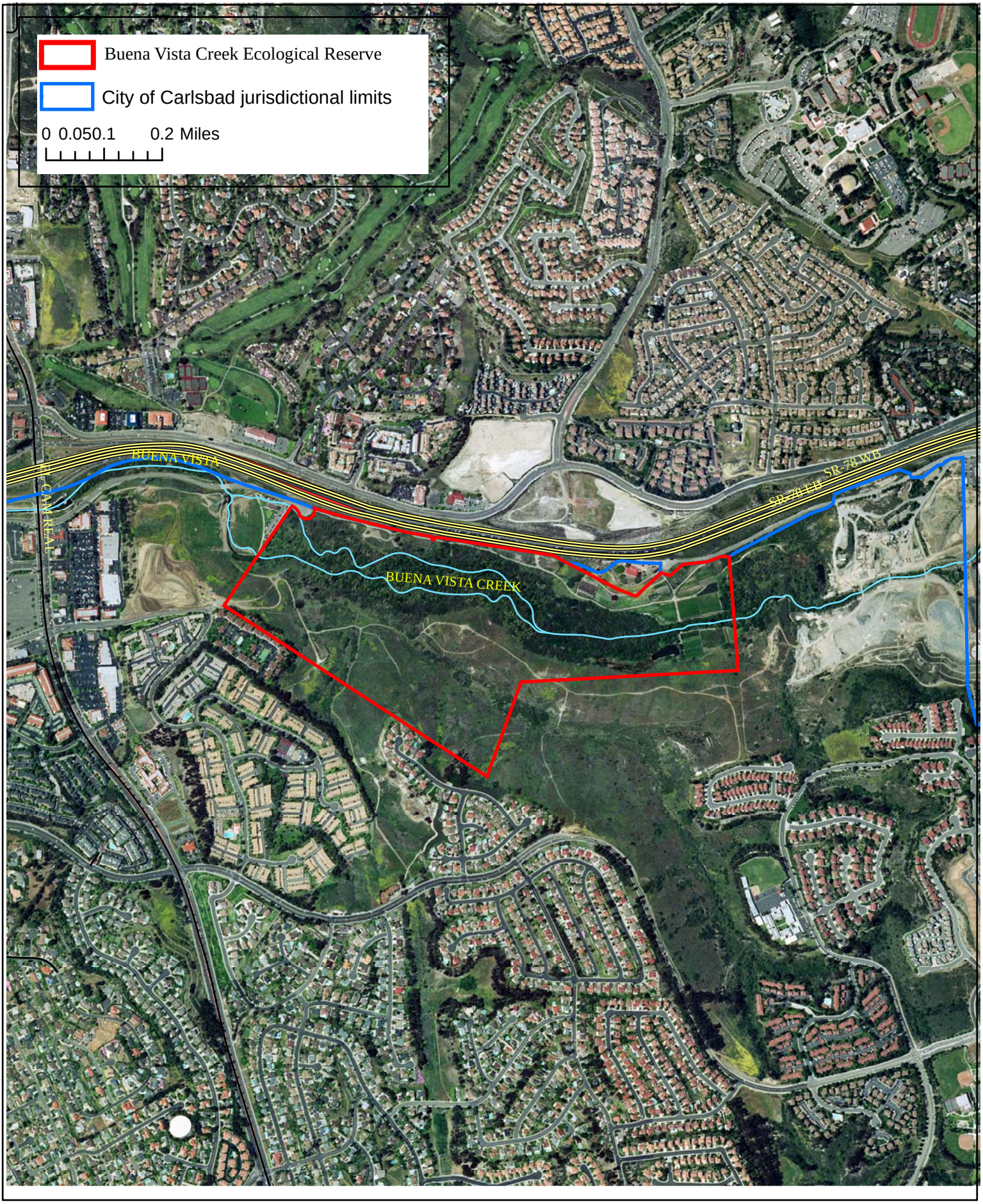

Figure 2
Project Vicinity
Buena Vista Creek Ecological Reserve-Carlsbad, CA

Center for Natural Lands Management

B. BIOLOGICAL SURVEYS

We censused the state and federally listed thread-leaved brodiaea, and began building a species list for the Reserve during this management year.

1. General plant surveys The plant species list generated by AMEC in 2004 was not very comprehensive. As part of our management activities, the Center wishes to obtain a more complete catalogue of plant diversity, and has begun to build this species list. We spent some time adding to the species list, and several plants were collected and later identified. We expect to produce a comprehensive species list by late 2010.

2. Sensitive plants There are some soils that may harbor more sensitive plants, and these were surveyed for sensitive species during this management year. One semi-sensitive plant not mapped, but known to occur on the clay soils surrounding the thread-leaved brodiaea population are small flowered morning glory (*Convolvulus simulans*). Also, while carrying out patrol activities along Buena Vista Creek, we were surprised to find Palmer's sagewort (*Artemisia palmeri*) growing under a dense willow canopy (Figure 3). We censused the thread-leaved brodiaea; and these had been previously noted to occur in three small locations within roughly a hundred feet proximate to one-another. During our surveys this late spring, only one location was found, and none flowered. The count of vegetative individuals in this spot was noted on a GPS unit, but this electronic information was lost, or not saved properly.

Based on soil conditions, and associated species composition, other sensitive plants may be found on site during future surveys, and these include the potential for more thread-leaved brodiaea locations, and perhaps Cleveland's goldenstar (*Muila clevelandii*).

3. Sensitive animals While carrying out other directed tasks the Reserve Manager mapped several species (Figure 3) where located, including three least Bell's vireo points, one pair and one lone coastal California gnatcatcher, and a white tailed kite (*Elanus leucurus*) pair. Other notable avian species mapped include the greater roadrunner (*Geococcyx californianus*), and American kestrel (*Falco sparverius*).

CDFG conducted two surveys for sensitive bird species and recorded 2 pair and 1 single male of coastal California gnatcatchers and 3 pair and 3 single male least Bell's vireo.

Figure 3
Sensitive species 2008-2009
Buena Vista Creek Ecological Reserve - Carlsbad California

490 245 0 490 Feet

Center for Natural Lands Management

C. HABITAT MAINTENANCE AND RESTORATION

Habitat maintenance activities at the HCA include removing nonnative plant species, clearing and thinning fuel modification zones and mowing and/or herbicide treatment of agricultural areas.

1. Fuel Zones The fuel zone at the terminus of Marron Road was mowed during mid spring. The fuel zone along the southern boundary of the Reserve was treated with Roundup herbicide March 2009. The temporary fuel zone south of Ms. Shelley Caron's residence was mowed once during the month of April.

2. Nonnative Species Removal Many nonnative species, including pampas (*Cortaderia selloana*), eucalyptus (*Eucalyptus* spp.), ash, Mexican fan palm (*Washingtonia filifera*), to name a few, dominated the site as of August 2007. During the fall of 2007, the San Elijo Lagoon Conservancy, as part of the Carlsbad Watershed Networks (CWN) Invasive Species Program, started treating certain non-natives with herbicide; and as of December, 2007 they had treated most of these species. The Carlsbad Watershed Network, via their grants, treated almost all the pampas (thousands of clumps), palms (hundreds of trees) and Eucalyptus (less than 30 trees) in the fall of 2007. In the fall of 2008, they started treating shamal ash (*Fraxinus* sp.), cape ivy (*Delairea odorata*), and re-treating any pampas, palm or Eucalyptus re-sprouts. During the late summer of 2009, CWN treated re-sprouting and recruiting Pampas, as well as cape ivy, giant reed (*Arundo donax*), big periwinkle (*Vinca major*), and a few Canary Island date palms (*Phoenix canariensis*) that hadn't died from previous efforts. CNLM assisted in these efforts by facilitating and scheduling re-treatments with CWN.

CNLM treated fennel and mustard on about 15 acres of upland habitat south of Buena Vista Creek. Most of the areas treated where treated in 2008 as well, so this was a follow up treatment. Some areas were still dense with fennel, but far less than 2008. Mustard had grown into many of the areas treated in 2008, as well as other non-natives that were not abundant in 2008. Subsequently, CNLM mowed about 5 acres of nonnative grass, mustard, fennel and other non-natives near the southern boundary of the Reserve.

CNLM removed about 20 Eucalyptus trees and trimmed up about 10 Eucalyptus trees near the Marron Road entrance to provide for additional fire safety in the area and remove an unwanted nonnative species.

Despite all these nonnative removal efforts, the site is still very infested with non-native plant species. Table 1 summarizes the known problem species, their severity and our planned management actions. CNLM recommends that CDFG work with us to obtain additional funding to treat these nonnative species. Table 1 also outlines other threats, their severity and our proposed management actions.

3. Habitat Restoration Preserve Calavera received a grant from the Wetlands Recovery Project to begin the restoration of 1.8 acres of riparian habitat in the fallow agricultural fields north of Buena Vista Creek. CNLM provided professional services to Preserve Calavera for them to

implement this grant. We contracted and supervised the removal of standing weedy plants and thatch. We supplied the species list, recommended abundance of each species, and spacing requirements. We helped supervise the planting and suggested methods of protection from herbivorous insects and animals. We contracted and supervised one round of weed treatments, and consulted Preserve Calavera on species identity and origin. We also consulted Preserve Calavera in identifying plants that were dead and needing replacement plantings.

4. Sewer Spill Grant Late in the management year, CDFG was awarded close to $400,000 as a result of the City of Vista's sewer spill into the Buena Vista Lagoon. These funds will be used for restoration of the fallow agricultural areas into southern willow scrub. CNLM met with CDFG to discuss the use of these funds during summer 2009. It has been agreed that partial use of these funds will be to restore the former agricultural usage area immediately to the south of Buena Vista Creek.

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Table 1. Threat assessment at the Buena Vista Ecological Reserve[1]

Threat	Locations	Size or Severity	Actions 2008-2009 Management Year	Planned Actions
Weeds				
Pampas grass H	Throughout riparian and in some upland areas	Found throughout the Reserve	Nearly all Pampas was treated in the fall of 2007 and retreated in 2008.	CWN will continue to treat as needed
Perennial pepperweed H	Riparian areas	Patch less than 1/8 acre in size	CNLM and CWN treated the stand	CNLM will treat late spring 2010
Saltcedar (*Tamarix* sp.) H	Riparian areas	Less than 30 individuals	None	These will be treated by CWN or CNLM in the next few years
Giant reed H	Riparian areas.	Less than 10 clumps	Clumps were treated summer 2009	CWN will continue to treat as needed
Fennel H	In open areas near the northwestern boundary. In the uplands south of Buena Vista Cr.	Thousands existed at time management commenced S. of Buena Vista Cr. Hundreds observed north of Buena Vista Creek	Thousands were re-treated south of Buena Vista Cr. spring 2009. None treated north of Buena Vista Cr.	Re-sprouts south of Buena Vista Creek will be treated in upcoming management years as budget or need permits, meanwhile PM will treat fennel north of the creek.
Artichoke thistle M	Along the northern boundary	Less than 100 clumps	About 70 clumps were treated.	This species will be targeted by CNLM during late spring 2010
Iceplant H	Patch along northern boundary	Patch is about 1/10 of an acre	Several clumps treated, summing about an acre in area	CNLM re-treatment during summer 2010
Shamal Ash	Riparian areas	Unknown, but likely in the 100's	Most, if not all, were killed during 2008	CNLM will search for living trees and recruits, map for CWN to treat
Palm trees (*Washingtonia robusta*) M, Canary Island date palms L	Riparian areas	Several *Phoenix*, only one large and many juvenile *Washingtonia*	A few *Phoenix* were treated	CNLM will search for living trees and recruits, map for CWN to treat 2010
Acacia trees (*Acacia* sp.)	Riparian areas	Several trees, mostly on north side of Cr.	None	CNLM will map and notify CWN to kill summer 2010
Virgina creeper (*Parthenocissus vitacea*)	Riparian areas	Large stands	None	None. CNLM may contract treatments, if other weeds are manageable, or as other funds become available
Poison hemlock (*Conium maculatum*) M	Riparian and transition areas		None	Population surrounding restoration area will be treated by PM

Ivy (*Hedera* sp.) H	Riparian areas	One large stand	None	This will be treated by CNLM during the next few years
Cape ivy H	Riparian areas	Widespread	All found locations treated by CWN summer 2009	CNLM will map and notify CWN to kill summer 2010
Calla lilly (*Zantedeschia* sp.) L	Riparian areas	Widespread	None	CNLM may contract treatments, if other weeds are manageable or as other funds become available
Bermuda buttercup (*Oxalis pes-caprae*) M	Riparian areas	Widespread	None	CNLM may contract treatments, if other weeds are manageable or as other funds become available
Nasturtium (*Tropaeolum majus*)	Riparian areas	Widespread	None	CNLM may contract treatments, if other weeds are manageable or as other funds become available
Edible fig (*Ficus carica*) M	Riparian areas	Widespread	None	CNLM may treat 2009-2010
Big periwinkle M	Riparian areas	Widespread	CWN treated some stands summer 2009	CNLM may contract treatments, if other weeds are manageable or as other funds become available
Dallis grass	Riparian areas	Localized	Treated infested area 2009	CNLM will watch this species for spread
Bermuda grass (*Distichlis spicata*)	Riparian and upland areas	Localized	None	CNLM may contract treatments, if other weeds are manageable or as other funds become available
Fireweed groundsel	Riparian transition	Localized, new to California	Mapped occurrence	CNLM will watch this species for spread
Erosion	Agricultural areas and along the northern access road	Not severe in the agricultural areas. The northern access road will require repair	None	CNLM will work with CDFG and the City of Oceanside Sewer department to maintain the road. Archeological artifacts are preventing basic maintenance to occur
Itinerants and Trespass	Riparian areas and upland areas	No itinerants known to occur at this time. Some motorcycle activity was observed. Fence and gate was vandalized	Any new camps observed were removed, or individuals found were arrested or told to leave. Frequent patrols.	Frequent patrols
Trash and Debris	Throughout	Widespread, much from upstream during rainfall	CNLM participated in the Earth Day clean up	Remove as observed

1There are many nonnative species at the Reserve. We try to annotate the main species, but the list is not inclusive.

H, M, L refer to California Invasive Plant Council rankings, and potential severity of plants, if present. H=high, M=moderate, L=limited

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

D. PUBLIC SERVICES

Public services activities at the Reserve include patrolling, trash pick-up, public education and volunteer activities.

1. Patrolling The Preserve Manager and/or Ranger patrolled the site every week for most of the year. In general, our patrols have minimized unwanted activities. We kicked two itinerants out who were camping in the large encampment in the center of the Reserve that had since been cleaned out during Earth Day.

2. Trash Removal At this time, the Reserve is much clearer of trash and debris than it was upon beginning the effort in 2007. Some trash blows in from SR-78 and surrounding areas, and much washes down during yearly flooding. The blown-in trash is removed regularly. The trash that washes down is removed wherever possible. Some of this trash remains, awaiting public service events like Earth Day and National Public Lands Day. This management year, we received help from many citizens on Earth Day, and removed all trash from the largest known encampment. A dump site along the western edge of the Reserve was cleaned out, and several shopping carts were removed. Several old encampments (Four of these have already been cleaned up) and associated trash were mapped (Figure 3), and we will eventually remove all signs of encampments.

3. Public Education and Volunteer Activities CNLM staff participated in a couple of volunteer events, sponsored and organized by Preserve Calavera. They included a planting effort involving local schools, and the Reserve Manager participated in a video that was commissioned by Preserve Calavera on the area, its cultural and biological resources.

4. Trail Planning Trail planning is on hold awaiting an archaeological resources section to be written into the draft management plan for the Reserve. See section 5 below for elaboration.

5. Stakeholder Meeting The Center met with CDFG personnel, San Luis Rey Native American Band representatives (Band), Oceanside and Carlsbad Sewer Dept. personnel, and Ms. Shelly Carron at her adobe to discuss road maintenance, the Management Plan, and trails planning. The meeting came to the decision that the Management Plan (Plan), and all trail planning was to

await the insertion of a cultural resources section that would direct proper management to dissuade artifact pilfering, among other archaeological concerns. The other concerns of the Band were that the maintenance road and former farm area adjacent to the Carron Adobe were very rich in artifacts, and that this needs to be addressed by the Plan. Any work such as fuel zone clearing, discing, or other digging activities needed to include a cultural resources monitor to avoid damaging these resources. It was furthermore agreed that the sewer maintenance road would have to be modified in such a way as to avoid further damage to artifacts. The Band discussed bringing to their tribal council a capping scenario that would serve the dual purpose of protecting the resources from being crushed, and hide the resources from opportunistic individuals. This took a year before the council allowed the discussion to be brought forward. The decision has very recently been made that a consulting engineer and surveyor will be retained by the Band for bringing a solution to fruition.

E. REPORTING

Activities included within reporting requirements include the management of the HCA's database/GIS system, the photo-documentation stations, and the production of various status reports to the USFWS, CDFG, City of Carlsbad and Center administration.

1. Database/GIS Management The Center has created a GIS database that includes 2007 and 2008 digital aerial photography, site boundary and parcel boundary, vegetation map and sensitive species.

2. Photo-documentation Stations Photo-documentation occurred prior to title transfer to CDFG and are provided within the MFA. CNLM will update these photographs in the upcoming years. Various photographs were taken in 2008 and stored for future retrieval.

3. Reports Year-End/Agency Reports. This report represents the second annual report for the property and will be submitted to the City of Carlsbad and wildlife agencies.

Annual Work Plan A draft annual work plan for the next management year has been developed and submitted to CDFG in October of 2009 for their review and comment.

Management Plan The Center drafted a Habitat Management Plan for the Reserve and submitted it to CDFG in May of 2008 for their comment and review (CNLM 2008). Comments and review have yet to be received from CDFG.

Budgets and Financial Status The total budget spent during this management year was $23,867, of the planned budget of $30,600. We spent less than budgeted to conserve money. The endowment has declined in the last two years as a result of the current financial crisis in the United States. The Center has worked at cutting budgets to ensure that there will be sufficient funds for future management. In addition, the Center still has about 2 years of Initial and Capital for the project, and thus, will not be using interest generated from the endowment for 2 years. This action is intended to allow the endowment to recover before using interest it provides.

Table 2. Endowment Status

Project	Inception Date	Original Endowment	Endowment as of 8/31/09	Initial and Capital as of 8/31/2009	Total Preserve Funds	Inflation Adjusted Endowment as of 8/31/09
BV Creek	4/2007	$776,644	$671,344	$88,349	$759,693	$800,549

III. SUMMARY AND DISCUSSION

We maintained all fencing and information kiosks, and garnered public participation for the betterment of the Reserve. We searched for sensitive plants, and began building a species list. We noted and/or mapped sensitive species or unusual occurrences while performing weed management or patrolling activities. We maintained all fuel zones, and expanded weed control and mapping efforts during this management year. We mapped the locations of debris and former encampments, and consulted in a 1.8 acre restoration effort. Finally, we patrolled regularly, keeping illegal usage to a minimum, and maintained communications with stakeholders regarding road maintenance and cultural resource protection.

Among other items, Reserve management in the upcoming year will include many weed treatments, focusing on eradicating a couple of high priority weeds such as Pampas grass, giant reed, and Mexican fan palms. We will target one or more priority weeds for eradication during this coming management year. We will keep illegal activities to a minimum and we will continue restoration efforts and public event participation. Furthermore, we will expand the species list to include more known plant and animal species.

IV. REFERENCES

CNLM/CDFG 2007. Buena Vista Creek Ecological Reserve Management and Funding Agreement with attachments. August 20, 2007.

CNLM 2008. Draft Habitat Management Plan for the Buena Vista Creek Ecological Reserve 2008-2012. Center for Natural Lands Management. May 2008.

CNLM 2008. Buena Vista Creek Ecological Reserve 2008-2009 Annual Work Plan. Center for Natural Lands Management. December 2008.